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[4910-13-P]

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2010-0755; Directorate Identifier 2010-NE-12-AD]**

**RIN 2120-AA64**

**Airworthiness Directives;** Rolls-Royce plc (RR) RB211-Trent 800 Series Turbofan Engines

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Supplemental notice of proposed rulemaking (NPRM); reopening of comment period.

**SUMMARY:** We are revising an earlier proposed airworthiness directive (AD) for RR RB211-Trent 800 series turbofan engines. That NPRM proposed to revise the Trent 800 Time Limits Manual (TLM) of the Trent 800 engine maintenance manuals (EMMs). That NPRM was prompted by RR reducing the life limits of certain critical engine parts. This action revises that NPRM by proposing to supersede an existing AD to prohibit installation of one certain critical part and to increase the life of another critical part whose lives were previously reduced by that existing AD. We are proposing this supplemental NPRM to prevent the failure of critical rotating parts, which could result in uncontained failure of the engine and damage to the airplane. Because of the extensive changes since the NPRM was issued, we are reopening the comment period to allow the public the chance to comment on these proposed changes.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 60 days AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE248BJ; phone: 011-44-1332-242424; fax: 011-44-1332-245418 or e-mail from [http://www.rolls-royce.com/contact/civil\\_team.jsp](http://www.rolls-royce.com/contact/civil_team.jsp), or download the publication from <https://www.aeromanager.com>. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Alan Strom, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7143; fax: 781-238-7199; e-mail: alan.strom@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2010-0755; Directorate Identifier 2010-NE-12-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD based on those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will

also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We issued an NPRM to amend 14 CFR part 39 to include an AD that would apply to RR RB211-Trent 800 series turbofan engines. That NPRM published in the Federal Register on August 3, 2010 (75 FR 45560). That NPRM would have revised the TLM of the RB211-Trent 800 EMMs. That NPRM was prompted by RR reducing the life limits of certain critical engine parts. Revision of the critical part lives has been necessary due to actual operational flight profiles not conforming to those assumed at entry into service and is associated with a revised Flight Profile Monitoring methodology introduced by RR. The methodology was originally based on engine thrust rating but is now based on operating shaft speeds.

### **Actions Since Previous NPRM Was Issued**

Since we issued the previous NPRM (75 FR 45560, August 3, 2010), RR requested that we supersede existing AD 2003-16-18, Amendment 39-13271 (68 FR 49344, August 18, 2003). That AD currently requires a life limit for intermediate-pressure (IP) turbine rotor disc, part number (P/N) FK21117, that is lower than the life limit proposed by this supplemental NPRM. Rolls-Royce plc substantiated their proposed increased life of P/N FK21117 by rig test and analysis.

AD 2003-16-18 (68 FR 49344, August 18, 2003) also reduced the life limit for IP turbine rotor discs, P/N FK33083, and all P/N FK33083 IP turbine rotor discs are no longer in service. RR has accordingly reduced the life for P/N FK33083 discs to zero, effectively removing them as a disc approved for installation in any engine. By revising

the previous NPRM (75 FR 45560, August 3, 2010) to supersede AD 2003-16-18, as discussed previously, this proposed AD would make these changes to the life of RR IP turbine rotor disc, P/N FK21117, and RR IP turbine rotor disc, P/N FK33083, mandatory. We have also determined that it is unnecessary to incorporate by reference the TLM of the Trent 800 engine EMMs. We can address the unsafe condition identified in this supplemental NPRM by mandating the reduced lives of the affected parts.

### **Comments**

We gave the public the opportunity to comment on the previous NPRM (75 FR 45560, August 3, 2010). We have considered the comments received.

### **Request to Change Compliance Paragraph (e)(1)**

American Airlines and Delta Airlines asked us to change paragraph (e)(1) in the proposed AD from “(1) Revise the airworthiness limitations section (ALS) ...Time Limits manual (TLM) dated June 15, 2009” to “(1) Revise the airworthiness limitations section (ALS) ... Time Limits manual (TLM) dated no earlier than June 15, 2009.” The commenters do not want to be forced to use a TLM dated earlier than the one currently in force.

We partially agree. We agree that a more efficient method of revising the life exists, so we changed this proposed AD to specify the revised part lives in Table 1 in the Compliance section of this proposed AD. We do not agree to the requested wording as it leaves compliance with the AD open to future revisions that do not currently exist. We did not change the proposed AD further as a result of this comment.

### **Request to Withdraw the NPRM**

Delta Airlines asked us to withdraw the NPRM (75 FR 45560, August 3, 2010).

Delta Airlines believed the NPRM is redundant because the current TLM already requires using the proposed tasks and life limits.

We do not agree. Although the new life limits are included in the current TLM, the new life limits are reinforced when mandated by an AD. We changed this proposed AD to specify the revised part lives in Table 1 in the Compliance section of this proposed AD.

### **Request to Supersede the Existing AD 2003-16-18 (68 FR 49344, August 18, 2003)**

Rolls-Royce plc asked us to change paragraph (b) of the proposed AD from “None” to “AD 2003-16-18 is superseded by the current AD.”

We agree. We changed paragraph (b) of this proposed AD to state that “This AD supersedes AD 2003-16-18, Amendment 39-13271 (68 FR 49344, August 18, 2003)”.

### **Relevant Service Information**

Rolls-Royce plc has issued Alert Service Bulletin No. RB.211-72-AE935, Revision 7, dated January 19, 2009. The actions described in this service information are intended to correct the unsafe condition identified in this supplemental NPRM.

### **FAA’s Determination**

We are proposing this supplemental NPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. Certain changes described above expand the scope of the previous NPRM (75 FR 45560, August 3, 2010). As a result, we

have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this supplemental NPRM.

### **Proposed Requirements of the Supplemental NPRM**

This supplemental NPRM would reduce the life limits of certain critical engine parts and would supersede AD 2003-16-18, Amendment 39-13271 (68 FR 49344, August 18, 2003).

### **Costs of Compliance**

Based on the service information, we estimate that this proposed AD would affect about 16 RB211-Trent 800 series turbofan engines of U.S. registry. The average labor rate is \$85 per work-hour, but no labor cost is associated with this proposed AD because discs are replaced at scheduled maintenance intervals. Prorated cost of parts would cost about \$45,000 per engine. Based on these figures, we estimate the cost of the proposed AD on U.S. operators to be \$720,000.

### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority

because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866;
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
- (3) Will not affect intrastate aviation in Alaska or;
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.



### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2003-16-18, Amendment 39-13271 (68 FR 49344, August 18, 2003), and adding the following new AD:

**Rolls-Royce plc:** Docket No. FAA-2010-0755; Directorate Identifier 2010-NE-12-AD.

#### **(a) Comments Due Date**

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD supersedes AD 2003-16-18, Amendment 39-13271 (68 FR 49344, August 18, 2003).

#### **(c) Applicability**

This AD applies to Rolls-Royce plc (RR) RB211-Trent 895-17, 892-17, 892B-17, 884-17, 884B-17, 877-17, and 875-17 turbofan engines.

#### **(d) Unsafe Condition**

This AD was prompted by RR reporting changes to the lives of certain life limited rotating parts. We are issuing this AD to prevent the failure of critical rotating parts, which could result in uncontained failure of the engine and damage to the airplane.

#### **(e) Actions and Compliance**

Compliance is required within 30 days after the effective date of this AD, unless already done.

(1) After the effective date of this AD, remove from service the parts listed in Table 1 of this AD before exceeding the new life limit indicated:

**Table 1 – Reduced Part Lives**

<b>Part Nomenclature</b>	<b>Part Number (P/N)</b>	<b>Life in Standard Duty Cycles</b>	<b>Life in Cycles Using the HEAVY Profile</b>
(i) Intermediate-pressure (IP) Compressor Rotor Shaft	FK24100	8,140	8,140
(ii) IP Compressor Rotor Shaft	FK24496	8,860	8,180
(iii) High-pressure (HP) Compressor Stage 1 to 4 Rotor Discs Shaft	FK24009	4,560	4,460
(iv) HP Compressor Stage 1 to 4 Rotor Discs Shaft	FK26167	6,340	6,000
(v) HP Compressor Stage 1 to 4 Rotor Discs Shaft	FK32580	8,550	6,850
(vi) HP Compressor Stage 1 to 4 Rotor Discs Shaft	FW11590	8,550	6,850
(vii) HP Compressor Stage 1 to 4 Rotor Discs Shaft	FW61622	8,550	6,850
(viii) HP Compressor Stage 5 and 6 Discs and Cone	FK25230	5,000	5,000
(ix) HP Compressor Stage 5 and 6 Discs and Cone	FK27899	5,000	5,000
(x) IP Turbine Rotor Disc	FK21117	11,610	10,400
(xi) IP Turbine Rotor Disc	FK33083	0	0

**(f) Installation Prohibition**

After the effective date of this AD, do not install any IP turbine rotor discs, P/N FK33083, into any engine.

**(g) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA, may approve AMOCs to this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(h) Related Information**

(1) You may find additional information on calculating Standard Duty Cycles and or using HEAVY Profile Cycles, in RR TLM 05-00-01-800-801, Recording and Control of the Lives of Parts.

(2) For more information about this AD, contact Alan Strom, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7143; fax: 781-238-7199; e-mail: alan.strom@faa.gov.

(3) Refer to European Aviation Safety Agency Airworthiness Directive 2007-0003R1, dated January 15, 2009, and RR Alert Service Bulletin No. RB.211-72-AE935, Revision 7, dated January 19, 2009, for related information.

Issued in Burlington, Massachusetts, on October 31, 2011.

Peter A. White,  
Manager, Engine and Propeller Directorate,  
Aircraft Certification Service.

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